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Figure 3. Annotated sequence of the paralogue cluster

	10	-	20	1 30	1 40	1 50	09	1 70	- 80	
-1	ccatgggagc	agcatc	gcag	tgcgcctccc	ccatggggage ageategeag tgegectece eggecqueat geogetaget ggtagtecee etgeogggtg cegacegeeg 80	gccgctagct	ggtagtcccc	ctgccgggtg	cogacogcog	80
CE CD	gggcggtccc	gggtgc	ggcg	gccggat <u>cta</u>	gtoggtgtgc	tccgacggtg	cctgctgggt	gaggggcagt	gtcaggcgga	160
	tagtagttac	cababa	addc	161 tggtggttoc ogogocoggge gggctgtgca gccgcagttg	gccgcagttg	gaadacaaat	googoogagt gootecacce ggtoggtgag googaeggg	ggtcggtgag	gccgacgagg	240
	cccgagcccc	ggcagg	9990	241 occgagodoc ggcaggggg ggcgccaccg cggccgtcgt	aggacgtagt	cgcggatgcc	ogoggatgcc gaegtggage egteegteee gggtggeeae	agteegteee	gggtggccac	320
	321 atggacgtcg	acgacg	gtgg	atggacgicg acgacggigg caccggagig citggcggcg	cttggcggcg	ttggtcaggg	tiggicaggg cotoggagac ggcgtagtac gcggcggtct	ggcgtagtac	geggeggtet	400
	cgaccggttc	ggggtg	goat	401 cgaccggttc ggggtggegt tecceggtet ggatgtcgag	ggatgtcgag	ccggaccggg	coggaccggg atggcggagc gccgggccag ggccttgagc	gccgggccag	ggccttgagc	480
481	gccgggcgga	gtccgc	coto	googggogga gtoogcooto ggogagtaco googggtgga	gccgggtgga	tgccccgggc	tgccccgggc gacctcccgg agttcgtcga cggcggcggc	agttcgtcga	caacaacaac	560
	cagcccgtcg	gtcacc	tegt	561 cagcccgtcg gtcacctcgt cgagctgccg gatcagctcg	gatcagctcg	teggegtega	toggogtega geggeacega cagttgeacg gtgegeacee	cagttgcacg	gtgagagaa	049
	gcagcgccag	ggagac	cagg	641 gcagcgccag ggagaccagg cgctgttggg ggccgtcgtg	ggccgtcgtg	caggtcgcgt	caggtogogt togataoggo ggogggoggt	ggcgggcggt	gteggeggeg	720
	gegaegatee	999000	gtga	721 gagaagataa gggaaagtga agagtgagg gaagaatgag	gccgcctgcg	tctccgcgtt	totocgogtt ggogatggog gtggooacca	gtggccacca	gttcggtgaa	800
	geeggeeage	cggtcc	tegg	801 gacggacaga agtactegg tgtacgacgg categgattg	catoggettg	tegtteateg	tegiticates aegecaeget gagegeec caeagitigie	gagogodoco	cacagttgtc	980
	cgtcgacgtt	gatogg	catg	881 cgtcgacgtt gatcggcatg cacaccgtgg cgcggaatcc	cgcggaatcc	ccactccttg	coactcottg cogacgacgg	аддоодддоо одаддаоасд		096
	961 gccgcgtagt	cgtcga	tecg	cgtcgatccg cgccgggcag	cccgactcga	acaccagggt	gtgcacattc	aggaagaagg	geggtacetg 1040	104
	gataccggcg	ggaaaa	tcac	041 gataccggcg ggaaaatcac ggccggtcct ggtccaggcg	ggtccaggcg	gogacataca	gogacataca gggoggttoc gttgggotog taaoggooga 1120	gttgggctcg	taacggccga	112
	ggaccgcgaa	gtcggc	cgag	121 ggaccgcgaa gtcggccgag aggagctgtc cggcctcggc	aggaatagga	ggcgaccgcg	ggogacogog gogaacacot cottoggogg tgcogcoogo 1200	cattaggagg	tgccgcccgc	120
	gegaeceaggg	togoca	caca	201 gagaccaggg tegecaegeg cegcagegee geetgeteet	geetgeteet	aggaggaaa	oggoggooo cogcagotoc acacgtgoot gggtgttogc 1280	acacgtgcct	gggtgttcgc	128

Figure 3a/3

REPLACEMENT SHEET SUBMITTED ON SEPTEMBER 4, 2009 Figure 3 Continued

	~	Figure 3b/3	Figur						
2560	caccgggcgc ggtcaccgcg acgctccagt cctatgtgtc	acgctccagt	ggtcaccgcg	caccgggcgc	ggcaactcac	CCGGTCGACt cgatcgtctt ccgtatctgg ggcaactcac	cgatcgtctt	CCGGTCGACt	2481
2480	CGTTTTCGCC CTGCTGCTCA TCAACGCGGG CAGTGTGGTG	TCAACGCGGG	CTGCTGCTCA	CGTTTTCGCC	GTCAGCGGGC	ACGCCCGGAA ACTGGAGCTG GGCCCTCCGC GTCAGCGGGC	ACTGGAGCTG	ACGGCCGGRA	2401
2400	CCGTCCATCA CCGTCCTGGG CTGTCTGGGC GTACGCGCCG 2400	CIGICIGGGC	CCGTCCTGGG	CCGTCCATCA	GGGTCCGTCA	TGAGGTTCGT CACGACGTCC CCGGCCTGCC GGGTCCGTCA	CACGACGTCC		2321
2320	ACGCAGAGAA GATCGGATAC GCAGTGTACG AGTGCAGCGA 2320	GCAGTGTACG	GATCGGATAC	ACGCAGAGAA	2241 CCACCGCGCT CTGTCATCAG CGCCGTCGGC GCCGTCAGCC	CGCCGTCGGC	CTGTCATCAG	CCACCGCGCT	2241
2240	GAAGAGTICG CCCGGTGTCC GGACCCGCGC GGCAACGTCC 2240	GGACCCGCGC	CCCGGTGTCC	GAAGAGTTCG	2161 CCGGCGAAGG AGCTGCCGTG TCGGACGTCT TCGCATCCGA	TOSGACGTCT	AGCTGCCGTG	CCGGCGAAGG	2161
2160	GACGACGCTG CGGGTTCTCC ACGGGGGAGA GATCCGCGAA	ACGGGGGGAGA	CGGGTTCTCC	GACGACGCTG	TGGGTGGGGG AGAGTCGGTC CGCTTCCCCG AGTGGGCCGC	CGCTTCCCCG	AGAGTCGGTC		2081
2080	GGCGATGCGG AAGCCGATCG TTCCCCAGTAC TTCTGGGAAG	TTCCCAGTAC	AAGCCGATCG	GGCGATGCGG	GGCCGCTGGC	CAGCGGTTCG GGTTGGTGGG AAGGGATGTT GGCCGCTGGC	GGTTGGTGGG		2001
2000	GAATCCGCCC TGACCTCGGG AGTTTGCAGC TAGCTGGAAT	AGTTTGCAGC	TGACCTCGGG	GAATCCGCCC	0000000000	COGRETTECT COGREGES COGGGCACTG CGCCGCGGCG	CCGTCCGGCG		1921
1920	CGGGAACACG CGTCCGGAAT CAGCCCCCGG AACGGCGGGA 1920	CAGCCCCCGG	CGTCCGGAAT	CGGGAACACG	CCGCCGGAGT	ACGTCCGCCG TGAACGCCCG TCAACGTGGC CCGCCGGAGT	TGAACGCCCC	ACGTCCGCCG	1841
1840	GATGACGCC GCATACCGGG TATCACGGCA CATCAGCATG 1840	TATCACGGCA	GCATACCGGG	GATGACGCCC	CTACCCGCCC	TICGCACGAC ACGACGGCIG CCAGGCCCC CTACCGGCCC	ACGACCGCTG	1761 TTCGCACGAC	1761 1761
1760	TOGGGAGGGG TOGGAGTGCO GCCCGCTCCT CGACGATCTG	GCCCGCTCCT	TCGGAGTGCC	TCGCCACCCG	GCCACCAGGG	1681 GCGAACATCT GTTCCGGTGG GGTGGCCCTG GCCACCAGGG	GTTCCGGTGG	GCGAACATCT	1681
1680	ATCGTTGCCG AGCAGTTCTC CGACTTCGGC GGCGACCGTC 1680	CGACTTCGGC	AGCAGTICIC	ATCGTTGCCG	1601 TOGCCATGCC GTCCGGATCG AGCCTGATGA TTCCGGTCAC	AGCCTGATGA	GTCCGGATCG	TCGCCATGCC	1601
1600	AGGGGGCGT GCAGACTICT GGACCAGCCG CCGACGGCGC 1600	GGACCAGCCG	GCAGACTICT	AGCGGGCCGT	1521 GTTCCGGCCG TCGGGGTCCA CCCGGGTGCC GATGGGGAAG	CCCGGGTGCC	TCGGGGTCCA	GTTCCGGCCG	1521
1520	TCGGACACCA GCGTCACCAC 1520	TCGGACACCA	TCCGGGCCGG CCGCCCGTC	TCCGGGCCGG	GCGTCGTCGA	1441 AAGTCGGCGG GTGCCCCGGA CGACTCGGCG GCGTCGTCGA	GTGCCCCGGA	AAGTCGGCGG	1441
1440	oggcacyccy acgaccyaac cGAAGCCGCG CGCCTGGCG 1440	CGAAGCCGCG	acgaccgaac	cagcacgccg	cgacgttgat	togocatcat cacgeococae agoogtooot egacgitigat	cacgeeeeae		1361
1360	tectoggigt egggeggeag eggiteegeg giteagegaga	cggttccgcg	caaacaacaa	tecteggigt	ggccagccag	gatggcggtg gccacgaggt cggtgaaacc ggccagccgg	gccacgaggt	gatggcggtg	1281

Figure 3c/3

Figure 3 Continued

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2361 cogactgogg aaactectgg cogagtgtgt getecoggae ggttogaeae eegaaetget geaceageeg eeggetaea 2640 2641 cottogogot oggoacogag cacatogaeg cgaacogitt igagcaggoc atcaggacag ggcgeceget ctogcecag 2720 2721 gaycaycacc ayyaqyoyog gyccyfyctc tyccayyocc - tyctyayctg gyycyyyaca cogtacyayy ayctyayogc 2800 GCCGGAGGTG CAGCGCAATC CGCTGCGGGA GCGGCTGATC 2960 TGCCGCGTCC GTAGCCGCGC CCGTTTCCGG CCATGTCTCC 3440 CGCAGACCCI CCGGGGCGAG CCGGTCCACG GGGGCGCGCA 3520 ogtogtogge gaggeggea geggeaagae ceggeteete 3680 totgggcgtc ctgttcggag agtgaggacc ggcccgacta 3760 tggccggaac gtatgcacgg attccccggt tggctgcggc 3840 3841 gogcaettoge ggaaetgett eeegaggtigg geeeggagee aeaggggeeg eaetteeeeg aegggggega ggagaaeage 3920 ctccggctgg gcgccgtgga gacatgggcg cactgctgtc 2880 GCGCTGCACG CGGCGATCCT GCGTCAGGAC AACGGTCTGG 3120 CEGCEGEGE GCCGTGACGG TGTCGGTCCC GGCACAGCGG 3200 TCCCGGGGGC GATGACGGTG GCGGCGGGCG CGGGGGCGGC 3280 Tresresse sesseanch sergesegt etgetggagt 3600 CGGACGCGCT CAGGACGTAC GAGGCGACGC GGCGGGCCCT 2801 gtacgaette geegteeagg aggeeaateg getggageag 2881 tgcggctggg gcgggcgag gaggTGATGG ACCAGCTGAA 3121 ACCGCGTCGT CCCGGCGTCC GCGCCGCCGT CGGCGGGGT 3201 TCGAGGCCGT TGACGCGGCC GGTGGCGGGG CGGGCGGGG 3361 CCACCTTCTT TCCCGGCTCC GTTTCTGGCT CGGCGTCCGT 3441 GGGCCCGGGT CCGCTTTCGG GTCCGTGGCG CTCCACCGGC 3761 ctggccgtgg acgaccgtgc tgcggcatct gtacgcgatg 2961 GGGCAGCTCA TGCAGGCGCA GTACCGGCTG GGGTGCCAGG 3041 GGCCGAGGAG CTGGGGACCG ATCCGGGCAA GGAGCTGGCG 3281 CCCCGCGTCC GCCTCCGGCT CCGTTTCCGC GTCCGTTTCC 3521 GGGGATGCGC ACCGGCCAGG TGTTCCCCAC GCTGCCGCCG 3601 ccgcgacgtc cgcgttccac acctcggggc gggtggcgtt 3681 tecgagtigg agegeteggt teeggacagt gigegeaceg

REPLACEMENT SHEET SUBMITTED ON SEPTEMBER 4, 2009 Figure 3 Continued

3921 ggcaacgggg acggtgcggg cgacgggggac agcacccogg cgcacaccct cacgetcgcg cccgeteteg cgececegeg 4000 1001 ctocagagag gotogitica cootgoacga egoegigige caggegotic igogoacggi cegogaacce giggigatea 4080 octgotgogo ctcotggtgg agcaactgog caccgtoccc 4160 acgaegecga getgegaegg geogeegeeg tgateeteea 4240 gcacgggcca ccggggaact cgccggaggg atgctgggca 4320 4801 GOGUTOCOG ACGOOGGOT TGATOCOODS GGGAAGOGG ACGOGAAGO GGGTGAAAG GGCGGTGCOG ACACTGGGCG 4880 TCCCCACGCG CGTCCCGGGA CCCGTCCCGG CACCCGTTCC 5040 TCGCGCGCA CCGCGCCCAT ATGITCCACC CGGTCCTGCC 5120 teceggaega getggeeggg gtegtgetge aaeggetgte 4480 aggoogtotg ggacgacotg gagaacacoc gtoggooogt 4720 gtocogggco coggggtoot egGCGGCGGG CGGCGCTTGC 4800 4881 GGGGGCC GTGGCCGGTC GCCGCCCCC ACGCCCAC GAGGAGCCC CATTGGACAC GTACGCAGG GATACGTACC 4960 GGCTGCACCG TACGGGACAC CGAAGGGCGC ACCTATCTCG 5200 4481 gagogigoog cocgoogigo googgigot ogacatoigo 4721 gtoccettoc tecgegeteg gggegetgge caeggtetga 4081 tgctggagga catggagcgg gccgacgccc cctcgctcgc 4161 ctgctgctcg tggtcaccac gcgcaccttc cggctcgcgc 4241 gtogacoggo gogogooggg tootgotgaa ogcootggac 4321 aggoccogga caccotocto gtacgggcoc tgcacgagcg 4401 tegeteegge agggetege egeegeetgg gagaeggaga 1561 cogtgetgeg ceatgaggga atcoegetgg agaacgteeg 4641 gaccccgggc ggctgaggtt cgtgcatccg ctggtccggg 5121 CCGGGGCGC GAGGACCGCA CCGTTCTGGT CTCCGGCCGC 4961 CGCGGTCCGG CACCCACCC GAGCCGCGTC CCGACGCACC 5041 GAGCCGCGC CGGACCCGGG CGCCGAGGCC GCGTGGCTGC stop cvm7par

Figure 3d/3

REPLACEMENT SHEET SUBMITTED ON SEPTEMBER 4, 2009 Figure 3 Continued

5201 ACGCTTCGTC GGTGCTCGGA CTGACCCAGA TCGGCCATGG ACGTGAGGAG ATCGCGCAGG CCGCCCCAA CCAGATGCGG 5280 5281 ACACTEGGTC ACTTCCACAC CTGGGGCACC ATCAGCAACG ACAAGGCCAT CCGACTEGCC GCGCGCTCA CCGACTEGC 5360 GGCGAGGGCG TCGAGATCGC CCTGCGCATG GCCCGTTACT 5440 GTCGCGCCGC ACCGCCTACC ACGGCATCGG CTACGGCAGC 5520 GCCCGGTGCT GCCCCATGTG CACCACCTCA CGCCGCCCGA 5600 6001 TATACCEGFC ACCCCACGGC GFGCGCCGFC GCGCTCGCCA ATCTCGACAT CATCGAACGG GAAGGGCTGC TGGAGAACGC 6080 CIGCGCGGC TGCCCGCGT GGGGGACGTC CGGCAACTGG 6160 6161 GCATGATGCT GGCGTCGAG CTGGTGTCGG ACAAGACGGC CGGCCGGGGG GGACCCTCGG GGTCGTGGAC 6240 6241 GGGCTGGGG AGGACGCGGG CGTCATCGTC CGGGCCACGC CGCGCTCCCT GGTCCTCAAT CCGGCGCTCG TGATGGACCG 6320 CATGGGCGCG GGCGGCGCC TCGTCCCGCC GCCGGACTAC 5760 GATCTGCTGG TGACCGCGAA GGGCATCACC TCCGGGTATG 5920 5921 TCCCGCACGG GGCGGTGCTC CTGACCGAGG AGGTCGCGGA CGCCGTGAAC GGGGAGACGG GCTTCCCGAT CGGCTTCACC 6000 6081 GGTGAAGGTG GGCGACCACC TOGCCGGGCG GCTGGCGGCC 5841 GGGGACCTGG TTCGCGGCCG AGCACTTCGG GGTGACCCCC 5361 GCCCCAGGGT CTCCAGCGCG TCTACTTCAC CAGCGGCGGC 5441 TCCACCACCG CACCGGCAGC CCGGGAGCGCA CCTGGATCTT 5521 GGTACGGTGT CGGGCTCGCC CGCCTACCAG GACGGGTTCG 5601 CCCGTACCAC GCCGAGCTGT ACGACGCGCA GGACGTCACG 5681 TCGGCCCCGG GCGGATCGCC GCGATGATCG GGGAGCCGGT

Figure 3e/3

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6400	0889	6560	6640	6720	6800	6880	0969	7040	7120	7200	7280	7360	7440	7520
2020505055	GGGCGCCGGG TCGGCACAGC GGCCGACCCG GCGCCTTCCC 6480	Tescocorac correccor sortesses recreecte 6560	CGCCAAGCGC CCCGTGCCAC GGTGGGAGAC CGCCGCCCGA 6640	OGCGTGCACC	CSTCATCGCC TCCGACGTTC CCGCGCGGT CGGCGCGGTG 6800	GGGGCGTGGT	CTGGTGGCCG	CACGGGACCC GTCGGCGAGC GGTATCCGAT GTCCCGTGTC 7040	TGGGCACCGC	GGTACGGGCC	CGACGACATC	TCGGCGCCGA CGCCTCCACC GGCGACACGG CGGCCGTTCT 7360	CTGGTCAGGG	GCAGGCCGGG
CGGGCGGATC	GGCCGACCCG	GCTCGGGCGC	GGTGGGAGAC	CAGAGGGTTC	CCGCGGCGGT	GGGATCGCCC	GGTGCGCCAT	GGTATCCGAT	GCGGCCGTGC	CAAGGGCCCG	CCGTCGTCCT	GGCGACACGG	GGCGCTGGAC	ACGACACCGA
TGGCACCCGA	TCGGCACAGC	CCCTGCCCCT	CCCGTGCCAC	CCTCTTCGCC	TCCGACGTTC	GGTCGCCGAC	ACGCCGCGGA	GTCGGCGAGC	505505055	TCGGTGTCGC	CAGGTGAGCC	CGCCTCCACC	TGGGCGCGCT	ACCGGGGCCC
CTGCGGCGGC TGGCACCCGA CGGGCGGATC GGCGCGCCC 6400	9990090999	TesccccTec	CGCCAAGCGC	CCGATGCGTG	CGTCATCGCC	GCCGGGACGC GGTCGCCGAC GGGATCGCCC GGGGCGTGGT 6880	GGGTACGAGG ACGCCGCGGA GGTGCGCCAT CTGGTGGCCG 6960	CACGGGACCC	CCGACTTCGA CGCCGCGCG GCGCCCTGC TGGGCACCGC 7120	GCGACGCTGA TCGGTGTCGC CAAGGGCCCG GGTACGGGCC 7200	CACGGACGCC CAGGTGAGCC CCGTCGTCCT CGACGACATC 7280	TCGGCGCCGA	GAACAGGTCC TGGGCGCGCT GGCGCTGGAC CTGGTCAGGG 7440	GGTGCGGGTC
GGACTCGGTG	CACCCGCGGG	GCCGTTCCCG	GTCGAGCCGC	GAAGICCCGT	CGGACCTCGC	GTGCTGCTCA	9909000999	TGATCGCCTC	TIACCGGGTG	GTGCGGCGAC	CGTTCTTCTG	GGGCTGGGCT	CGTCGCGTTC	1441 ACGICGICCG GGACAGCGGC TECGGCGGCG CCCIGGICAC GGIGCGGGTC ACGGGGCCC ACGACACCGA GCAGGCCGGG 7520
6321 GGCDACGGCG GACGACGTCG CGACGCGCT GGACTCGGTCGTCGTCGCTCGTCGTCGTCGTCGTCGTCGTCGT	06006660060	6481 CGTTTCCCGG CGCCTTTTCC GTGCCCCGGC GCCGTTCCCG	6561 GCTGTGGCGC CGTTCCCGTT CCAGCGCGCT GTCGAGCCGC	6641 CGGGGGGGG GGAGCCCGGC AAGCCGAAGG GAAGTCCCGT	6721 ACGGTCACGC CGGGATCAGG GCGTCCCACG CGGACCTCGC	6801 TTCACCCGTT CGCGGTTCGC CGCGCCGAGT GTGCTGCTCA	6881 GGTGCTGTCC GGCAACGCCA ACGCCGGGAC GGGCCCGCGG	6961 GGATCGTCGA CTGCGACGAG AGGGATGTGC TGATCGCCTC	7041 CGGGCCCATC TGCGGGCGGT GCGCGGGCCC TTACCGGGTG	7121 GGGCGCCCGT CCCACGATCC GGCGGGCGCG GTGCGGCGAC	7201 CGGCGGAGCA GGACGACCGG TCGACGCTGG CGTTCTTCTG	7281 TTCGGCGGG TCGCGGACCG CGCCTTCCAC GGGCTGGGCT	7361 CGCCAACGGG CTCGCGGGCC GGGTGGACCT CGTCGCGTTC	TGCGGCGGCG
GACGAGGTGG	GTGACGAGAC	CGCCTTTTCC	CGTTCCCGTT	GGAGCCCGGC	CGGGATCAGG	CGCGGTTCGC	GGCAACGCCA	CTGCGACGAG	TGCGGGCGGT	CCCACGATCC	GGACGACCGG	TCGCGGACCG	CTCGCGGGCC	GGACAGCGGC
GGCCACGGCG itop cvm6par	55555555555	CGTTTCCCGG	GCTGTGGCGC	2929299992	ACGGTCACGC	TICACCCGIT	GGTGCTGTCC	GGATCGTCGA	CGGGCCCATC	GGGCGCCCGT	CGGCGGAGCA	Trececess	CGCCAACGGG	ACGTCGTCCG
6321	6401	6481	6561	6641	6721	1089	6881	6961	7041	7121	7201	7281	7361	7441

Figure 3f/3

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7600	7680	7760	7840	7920	8000	8080	8160	8240	8320	8400	8480	8560	8640
CGCCGGTCGC	GGCCGGGAGG	CGTCCATATC	CGCGCCTCGG	CACGGGAGCG	CACCGCTGCC	2222222222	CGGCCCCGAT	ACGGGCCTGA	00000000000	GCTCGGCGAT	AGGGAGTCGG	CCAGCGGAAG	CRECEACOOR
CCCGACTGGG	CCGGGTCGGC	GCGAGGTGAC	GCGGGGTACC	GCGCAGGGAA	GCCCTACCCC	CGTCGTCCGC	TAGAGCAGIT	GTCGAAGCCG	GTGTGCCGGT	CGCCGGATCT	CGCGTAGTCC	CTTCGATGGC	AGGTGCAGGA
CGGCCCGGCA	GGATCACGAT	CCGCACGGCG	CGACCTCCTG	GGGCGCGGGA	GTCCCCGGCC	CGCGTTCTCG GCGTTCTCGG CGTCCGC CGCCGCCCC 8080	GGCGTACTGG	CCTCGACCAC	0000000000	GCCGACGGTG	AIGCIGACGC CGIGCCCGCG CGCGIAGICC AGGGAGICGG 8480	ACCAGGCCCT	GTGCGCGTCC
CCGCGGTGCA	TCTCCCGGGC GGATCACGAT CCGGGTCGGC GGCCGGGAGG 7680	CACCGCGTAT CCGCACGGCG GCGAGGTGAC CGTCCATATC 7760	TCCACGGCTG CGACCTCCTG GCGGGGTACC CGCGCCTCGG 7840	GCGACCGCGA GGCGCGGGA GCGCAGGGA CACGGGAGCG 7920	TCCGTCCGCT GTCCCCGGCC GCCCTACCCC CACCGCTGCC	CGCGTTCTCG	TGGTGGCGCG GGCGTACTGG TAGAGCAGTT CGGCCCCGAT 8160	GCCGGGGACA CCTCGACCAC GTCGAAGCCG ACGGGCCTGA 8240	GGACAGCCCG CCGGGGGCCG GTGTGCCGGT GCCCGGGGCG 8320	GCGGCAGGCC GCCGACGGTG CGCCGGATCT GCTCGGCGAT 8400	ATGCTGACGC	CTCCGGGTCC	TGGTGTCGCT
7521 CGCGTGGGCC GGGCGGTGGT CGACGCGCG TCGCTGAGGG CCGCGGTGCA CGGCCGGGCA CCCGACTGGG CGCCGGTCGC 7600	0000000000				CTCCCGTCGT	COGCGTCCAC	GCGGGCGACG			GAGACGTACA	GGCGGTGACG	8481 GCGGCGGATT GTGGCCGGGG ATGCCGACCT GGACCAGGCG CTCCGGGTCC ACCAGGCCCT CTTCGATGGC CCAGCGGAAG 8560	8561 IGGGGTGCCGT GGTGGTAGAT GCCCCCTAG ACGGGTGGGT TGGTGTCGCT GTGCGCGTCC AGGTGCAGGA CGCCAACCG 8640
CGACGCGCCG	7611 CGCCGTGGCG GGTGGACACG GGGACGAAGG CCCCGGCCGG	7681 TCTTCCCCGC CCCCCGCGAC CGGGCCCGCC CGGACGCCGT	7761 GACCTCGGTG TCCCGGGCCG GGCGCCCGGC GOGTTCACGG	7841 GGCGGGCGG GCCGTCAA CGGCGCTCC CGGGCGACG	7921 GGCCCGGTGG TCGATCGGCC ACCGGGCCCG CTCCCGTCGT	8001 CGGCGAAGTC CACGGCGCTC TOGGCGTOCA COGCGTCCAC	8081 GGIGGCAGGG GAGAGTCCAC CGGIGCCGAC GCGGGCGACG	8161 CTCCGCCGCC AGCAGGGAGG TGATCCCCGA CGGGTCGTAC	8241 GCTGCCCGAC CACGTCGAGC AGGGTCAGCA CCTCGCGCGA	8321 TACGCCGGGT CGACGACGTC GATGTCGACG GAGACGTACA	8401 GCGGGGGT GAGGGCCGGG TGAAGTCGGC GGCGGTGACG	ATGCCGACCT	GCCCCCTAG
CGGCGGTGGT	GGTGGACACG	CCCCCGCGAC	PCCGGGGGG	GCCGTCTGAA	TCGATCGGCC	CACGGCGCTC	GAGAGTCCAC	AGCAGGGAGG	CACGTCGAGC	CGACGACGTC	GAGCGCCGGG	GTGGCCGCGG	GGTGGTAGGT
CGCGTGGGGC	CGCCGTGGCG	TCTTCCCCGC	GACCTCGGTG	9900990090	9919900099	CGGCGAAGTC	GGTGGCAGGG	CTCCGCCGCC	GCTGCCCGAC	TACGCCGGGT	Peccececet	GCCGCGGATT	GGGGTGCCGT
7521	7601	7681	1761	7841	7921	8001	8081	8161	8241	8321	8401	8481	1928

Figure 3g/3

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8641 GCGTGGCGG GCGTGCACGG CGCGCAGGGC GGCCAGGGAG AGCGAGTGGT CCCCGCCCAG CATCAGGAAC GCGTGGTTGC 8720 9721 GITCCAGGAG CCGGGICAGG GCGACCGTCG CGGTGTCCAT CGCCAGGTCC ATCGAGAAGG GGCTGAGGTC GATGTCGCCC 8900 9361 ACACCCGGC CCTGGAGCCT GAGCCTGCGC ACCGCGTCGA CGGAGGCGCCG CACCGTCTCG CCGAAGTCCA CGTCCTCCGG 9440 9441 CGGCACCGFG FCGAFGACA COGCGFCGFA CAGGCGCGFT GCCAFGGCGC CCFFGACGC CGFCACCTCG FCGCCCGGA 9520 9521 TUCUTTUGGO GAGGAGCAGT COGGTCCACG CGCTGGTGGT GCCGGACCCC TCGTGGATGC CCACCTTGGG CCCGCCACG 9600 9601 GICTGGGGG GCAGCAGCAGGGCC GGAGAGGGCC TGCCGCAACA CCCACTTGTC GGTGCCCCGC CGGCGTTTGA GCCCGGGTTC 9680 9881 BAGGGGAGACC AGGGGGTOCA GGACCGGGG GTCCCAGTAC GGGTGGGTGG TCCACTTCCC GGGGATGCCC GCGAGGAGGG 9760 GGTCGATGCC GACGCCGTGG ATCAGGCTGG ACTCGTGCCG 8880 GIECCICCEI CGIACGGGC GCCGACGACC ACCACGICAT 8960 TACCGACGCC CGGCCACCCC GTGCGGGCTC CCGTTCCCGT 9120 9121 GCCGACCCCC GTTCCCGAAC GGGCTCCCGT TCCCGCGTGG AATCCCGTTC CCGCGCCGC GGCGCCGTCC GGGCCGCGGC 9200 9201 IGCCCCTCC TCCGAGACCG CTCCTGCCGT TCCTGCGGCC 9281 GCACCGTCCG CGCCGCCGCC GGTGCCGTTG CCGCCGCGG 9041 CIGGCCGTIC CCGGCGACC CGGCCCTGCT CCCGTTCCCG 9801 CCGTCGACCA CGTCGATCCG GTCGAAGACC CCTGGGGCCCC 8881 GATGGCGCGC GGCGCGAACC GCGCCCCGG CCGGTAGCTG 8961 GGCCGATCGG GTCGGGCCGG TGGCGCAGCC GCATGAAGGT

Figure 3h/3

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9761	GGGACATCTC	GTTGAGGCCG	TOGAAGCOCG	9761 GGGACATCTC GTTGAGGCCG TCGAAGCCCG CCATGTCGCC	OGCGATCTCG TCGTCGAGGG ACCAGAGCGA GGCCCTGCGC 9840	TCGTCGAGGG	ACCAGAGCGA	GGCCGTGCGC	9840
9841	9841 CGGTGCATAC CGCCGAGCGG GATGTCGGCG CCGTACCCGG	CGCCGAGCGG	GATGTCGGCG	COGTACCCGG	TGAGGATGCG	GAGCGGCCCG	TGAGGATGCG GAGCGGCCCG GTGTCGAGCC GCCGGTAGAG 9920	GCCGGTAGAG	9920
9921	9921 GGCGACGAGC GGCAGCAGGT ACTCCAGGAC CGTGGGGTCG	GGCAGCAGGT	ACTCCAGGAC	CGTGGGGTCG	GTGATCTCCG	CGGCGGCGAC	GTGATCTCCG CGCCGCGAC CGCCCAGGGC AGTTCCCTGA 10000	AGTTCCCTGA	10000
10001	10001 CGAGTTCGGC CGAGTGGAGC CGGATCTCGC TGTGCGCGT	CGAGTGGAGC	COGNICIOSC	TGTGCGCGGT	GCCCAGGTGG	ACGGCGACCG	GCCCAGGTGG ACGGCGACCG AGGGGCCGC GTCGAACTCG 10080	GICGAACICG	10080
10081	10081 TCGGACACCT CGGTGCCCAT CGACACGGAC CGTGTCCCGG	CGGTGCCCAT	CGACACGGAC	CGTGTCCCGG	GTGCCAGGGC	CGCCGTGTGG	GIGCOAGGC CGCCGIGIGG GCGCCACTC CCCCGGAGIC 10160	CCCCGGAGTC	10160
10161	10161 GATGCCGCCG GACAGGACGA CGGTGGGGGC CGCCTCCCCG	GACAGGACGA	CGGTGGGGGC	COCCTCCCCG	CCGCGCAGCC	GGGTGCGGAC	CCGCGCAGCC GGGTGCGGAC CGCCGTGGCG AGGCGTTCGC 10240	AGGCGTTCGC	10240
10241	CGACCAGGTC	CACCGCCTCC	CGTTCGCCGG	10241 CGACCAGGIC CACCGCCTCC CGTTCGCCGG GCAGCGCCCG	GGAGAGCGGG	GGTGTCCAGG	GGAGAGCGGG GGTGTCCAGG TGCGGACCGC CCTGGCGGTG 10320	CCTGGCGGTG	10320
10321	10321 ATGTCGGAGC CGCCGACTCC GTGCAGCAGG AGGGCGGTCC	CGCCGACTCC	GTGCAGCAGG	AGGGGGGTCC	CGGCGGGGAC	CCGGCAGACG	CGGCGGGGAC CCGGCAGACG CCCGCCCC CCGGCGGGT 10400	CCGGCGCGGT	10400
10401	10401 GIGGGIGCCG GACAGGCCCA GOGGCCGGCC CGGCTCGTGC	GACAGGCCCA	2000200000	CGGCTCGTGC	GCCAGGGTCT	TCGCCTCGGT	GCCAGGGTCT TCGCCTCGGT GGCGGCGCTC AGCCCCGTCA 10480	AGCCCCCGTCA	10480
10481	10481 CGTCGGCGCG CAGCCACAGC GGTACCGAAC CGGCGTGGTC	CAGCCACAGC	GGTACCGNAC	COGCGTGGTC	GGTGGCCGCG	ACGGTCGCGC	GGTGGCCGCG ACGGTCGCGC CGGTGGAGGC GTCGGTGAGC 10560	GTCGGTGAGC	10560
10561	AGTGCGGCGA	ACCGTCCGTT	CAGGAGCCGG	10561 AGTGCGGCGA ACCGTCCGTT CAGGAGCCGG AAGGCCCCGG	GGCCCCAGCG	CCGCCAGGCG	GGCCCCAGCG CCGCCAGGCG GCCAGCAGCA GTTCGGCGTC 10640	GTTCGGCGTC	10640
10641	10641 GCCGAGGGCG GCAGAGGAC CGCCGAGCGC TCCGGTCAGC	GCAGAGGAGC	CGCCGAGCGC	TOOGGTCAGC	TCGGCGCGGT	TGTACAGCTC	TCGGCGCGGT TGTACAGCTC GCCCGCCAGG AGCAGCCGGA 10720	AGCAGCCGGA	10720
10721	10721 CCTGGCCGTC GGCGACCAGG ACGGGCGGAC GGCCCAGGGT	GGCGACCAGG	ACGGGCGGAC	GGCCCAGGGT	CACGGCCGTT	CCGCTCCAGA	CACGGCCGIT CCGCTCCAGA GCGGGTACGC GGTGCCGTCG 10800	GGTGCCGTCG	10800
10801	10801 TECACGGGA CAFGGGTCC GOGGACGGCG AAGCGGGGTG	CATGGGTCCC	GCGGACGGCG	AAGCGGGGTG	CGCTGCCGGG	TTCGGAGTGA	2000000000	9990090090	10880
10881	SCECCCTCG	GTGCCGATGC	GCACCCGGAA	TOCGTACACG	start orf3)	CGGGCATGGT	start origar 4 AGGIGGGGC CGGCAIGGT GAAGTCGTCC TCGACGCTGG 10960	TCCACGGTGG	109601
10961	TCAGATGGCC	:f2par AGGGCGGCGA	AACCGCCGGA	4— end orf2par 10961 TCAGATGGCC AGGGGGGGA AACCGCGGA CTGGAAGTCG TAGGCCACCG GTACCTCGAT CAGGAACGGG CGGCCGAGTC 11040	TAGGCCACCG	GTACCTCGAT	CAGGAACGGG	CGGCCGAGTC	11040

Figure 3i/3

REPLACEMENT SHEET SUBMITTED ON SEPTEMBER 4, 2009 Figure 3 Continued

GGGAGCGCTG GTGTCCGAGG TTCTGGTACA GCTCGATCAG 11200 AGGCCCAGGC GCACGGCCGT CTCGATGTCG GCGCTGTTGG 11280 GCCGGGCCGG GCGATCTGGG CGGCCATGGC GCCGGGCAGT 11360 CGTACGGCTG GTCGGACTTG GCGAAGAGCA CGCCGTAGTG 11440 CTCGTCGAGG CGGCGCGCC AGTCGGCGTC CAGGGCGTGG 12080 CGTTCAGCTC GGCGCCGAGG AGGTCGACCG GCAGGCTGAT 12160 GCGCTGTCGA CGAGGTTGAC GATGTCCTCG CCGCGTTCGA 12240 11041 GGGGGGCCTT GGTGAGGGCG GGGAGCAGCG AGSTGCGGTC GGTGGCGCGG AGGGCCTCGC AGCCGTTGGC CTCGGCGAGC 11120 AGGACGGAGT TCATGCAGTC GATCACCTGG TGGACCCGCA 11520 GACGCGGGCG CGCAGGGCGC TGAGGTCGTG CCGGGTCTTG 11600 ATTCGGCGAC GTTGGTGACG ATGTCGATGT CGGCGCGGAA 11680 GIGGICTIGG CCCGGCCCCG CGTCCACAIG GAGGGGCGCA 11760 GGCGGGGCCG AAGATCTCGT CGAGGGCCGG GTGGCCCGAGA 11840 GGTGGTCGTG CGGCAGGACG CCCTTGGCGG TGTAGGTGGT 11920 GCGTCGACGG CCCCGGCGCG GATGACGGCG CTACCGACGA 12000 11761 GGTCCTCGGC GTAGTCGTAG COGATCGCCA GGAGGAGGTC 11841 ATGCCGTCCA TGTAGCCGCT GATGGCGCCG TAGTTGAGCG 11121 TGGACGAAGT CGACGCTTCC GAAGCCGACG GCGGGGGCGT 11521 TGCCGTCCTC GTACTCGGTG GGGTCGGCGA GGAATTCGGC 11601 GGGGCGAGGC CCGAGGTCGC GTCGTCGAGC GCGGTGACGA 11681 CAGCTCCGG ATCGGGTTGA CCTCGGGGGC GACCCGGACC 11921 GACGACGGGG ATGTTCAGCC GCTCGGCGAG GGCGCGCAGG 12161 GAAGCIGGGA CCCACGGCT CGATCCGGCT GTTGAGGACG 11201 GCCGTTGCGG TCGTTGTTGA CGACGACCAT GACGATCGGC 11281 AGTGGAAGCC GCCGTCGCCC GCGATGAGGA AGACGGGCTC 11361 CCGTAGCCGA AGCTGGAGCA GOCCGCGGAG GTGAGGAATC 11441 GCGGAAGAAG CCGATGTCGC TGACGAAGGT GCCGTTGTCG 12001 CGAGGAGGG GTTCTCGGCC TCGCGCACCA GCTCAGCGGC 12081 GTGGCGGTGG CCCGGACCAG GGGGGCGTCG GTGGGGGTGC

Figure 3j/3

80

REPLACEMENT SHEET SUBMITTED ON SEPTEMBER 4, 2009 Figure 3 Continued

GTAGCACTCG 12320 12321 TACGACTCGG ACTGCGCGC CACCCCGATG ACCGAGCTCC GGTCCAGGCC GGAGGTGGCG ACGCCGGTC CCAGGTTGGT 12400 12401 CATGCCGGGG CCCAGGGTCG CGAAGCACGC CTGGGGGGGG TTGGTGATCC GGGCGAGGAC GTCCGCCAA	rc
CCAGGTTGT 12400 12401 CATGCCGGGG CCCAGGGTCG CGAAGCACGC CTGGGGGCGG TTGGTGATCC GGGCGAGGAC GTCCGCCAT	rc
12401 CATSCCGGGG CCCAGGGTCG CGAAGCACGC CTGGGGGCGG TTGGTGATCC GGGCGAGGAC GTCCGCCA	
ACCCCGGCGG 12480)G
	G
12481 TGAACTCGTG CCGGGTCAGG ACGAAGTCGA GTCCTTCGAC CTCGTCGAAG AGAATGGCGG ACGCCTCCGGCCGACGACG 12560	
Start of orf2par ← 12561 CCGAATACAT GGTCGACACC GTACTGGTGA AGACGTTCCA GCATGGCTTT CGCGGTCGTG GTGGCCATC	
AGATCTCCTT 12640	
12641 CGCATCGGAC GGGCGCCGGG ATGGCGCCCC GGAAAACGCG GCACCGGGCG GTGCGCACCG GGTGGCGCA	AC.
ACCGTGGGTG 12720	
12721 GTGGCGTTGC CACTGTGCGG ATCGCCTCTT GGCGGCGGTC GGACGCCCGG CTTGGACAGA ATGGGCAAC	3G
CGCGTTCAAG 12800	
12801 GCATGGCGTC CATCGTCCTC GTGGCGCTTT TCGTGAAATC CGTCCGGCGC CGACGGTCTC CATCCGATGCGCCCTTC 12880	?C
12881 CGTCCACCGA TCCGAGGAGA ATCCATGGAT GTCCTGGCCG CGTTGGAGCG CAAGCCCAGC CTGAATCT	CT
TCCCCATCGA 12960	
12961 GAACCGGCTG TCGCCGCGCG CCAGTGCCGC GCTGGCCACC GACGCCGTCA ACCGCTATCC GTACTCCGA	4G
ACCCCGGTGG 13040	
13041 CCGTCTACGG CGATGTCACG GGGCTGGCCG AGGTGTACGC GTACTGCGAG GACCTGGCCA AGCGCTTC	2T
CGGGGCGCGC 13120	
13121 CACGCCGGTG TGCAGTTCCT GTCCGGTCTG CACACCATGC ACACCGTGCT GACCGCCCTG ACCCCGCCC	Ğ
GCGGCCGCT 13200	
13201 CCTGGTCCTC GCGCCGGAGG ACGGCGGCCA CTACGCCACG GTGACGATCT GCCGGGGCTT CGGCTACGA	4G
GTCGAGTTCT 13280	
13281 TACCTTCGAC CGCCGGACAC CTGGAGATCG ACT 13313 (S2C ID NO:16)	70

Figure 3k/3